

REMARKS/ARGUMENTS

Telephone Interview Summary

A telephone interview was conducted with the Examiner on 30 March 2009. The discussion centered on wording that would better define the guidewire as the only element that extends in front of the working head when the working head is advanced to the distal end of the imaging guidewire. Language that would further distinguish the relationship between the working head and the catheter body was also discussed.

In the Claims

Claims 1-31 remain in this application. Claims 1 and 16 have been amended. New claim 32 has been added.

§ 103 Rejections

The Examiner has rejected claims 1-31 under 35 U.S.C. 103(a) as being unpatentable over combinations of Patel et al. (US2000/0077642), McKenzie et al. (5,993,469), Findlay (6,623,495), Masch (4,728,319) and Chornenky et al (US5,582,171). The Examiner's rejections are respectfully traversed.

Applicant relies on arguments presented in previous papers regarding the differences between the present invention and the cited prior art of McKenzie et al., Findlay and Masch.

Regarding Patel et al, as mentioned above regarding the Telephone Interview, it was the Applicant's intention with the amendments of the paper of 19 November 2008, that independent claims 1 and 16 include the limitation that when the catheter is advanced to the distal end of the imaging guidewire, the only element of present invention that extends in front of the working head is a portion of the imaging components located at the distal tip of the imaging guidewire. During the telephone interview of 30 March 2009, the Examiner pointed out how the phraseology of the amendments of 19 November 2008 could be interpreted to read on the Patel et al. device. Therefore, Applicant has now amended independent claims 1 and 16 to include language that better defines the feature of the only element of present invention that extends in front of the working head is a portion of the imaging components located at the distal tip of the imaging guidewire.

This is clearly different than the device of Patel et al. that includes at least elements 26 and 42 that extend in front of the working head 28.

This is in clear contrast to the teaching of the present invention that teaches Figures 1, 4a-6 and 15 and in the specification on page 16, the second paragraph,

“...The distal end of imaging guidewire (16) comprises a folding mirror (17) that is optically coupled to a grin lens (18), and a preformed curved tip transparent to light energy (20) that encapsulates the folding mirror (17). In some embodiments of the invention the folding mirror (17) and the grin lens (18) protrude in front of the working head. In the preferred embodiment, shown in FIG. 1, only folding mirror (17) protrudes in front of the working head. This design minimizes the trauma to the blood vessel. It is an important feature of the present invention that the angle between folding mirror (17) and the catheter axis may vary, thus enabling the image to be taken at cross sections distally or proximally to the folding mirror (17). In the arrangement shown in FIG. 1 the angle is 45 degrees and therefore the image is taken at the section of the folding mirror (17). An optical fiber (19) is optically coupled to the grin lens (18). The optical fiber (19) extends, via a central lumen, all over the imaging guidewire (16) up to the proximal end where it is coupled to an optical connector (not shown in drawing)...” (emphasis added)

in the last paragraph on page 19,

“...FIG. 5 shows an imaging guidewire (16) that has the same diameter (e.g., 350 microns) along its entire length. This small diameter guidewire includes a small diameter lens (18), as described in U.S. Pat. No. 6,445,939 to Swanson. This construction allows only a small part of the imaging guidewire (16) to protrude in front of working head (6). This minimizes the trauma to the blood vessel. The part that protrudes includes folding mirror (17) that is located in preformed curved tip transparent to light energy (20). Also are shown lens (18) and optical fiber (19). Imaging guidewire (16) rotates on a sliding surface (27). A ring (28) is fixed to distal end of imaging guidewire (16), thus preventing imaging guidewire (16) from being pulled back beyond sliding surface (27)...” (emphasis added)

and in the first paragraph on page 20,

“...FIG. 6 shows an alternative embodiment of the working head (6). The working head (6) has opening (7) on its distal surface. The distal end of imaging guidewire (16) is substantially bigger than its other parts. In order to reduce the part of the imaging guidewire (16) that extends in front of working head (6) a recess (29) is done in the front face of working head (6). This construction minimizes the trauma to the blood vessel. The part that protrudes out of working head (6) front face includes only folding mirror (17) that is located in preformed curved tip transparent to light energy (20). Imaging guidewire (16)

rotates on a sliding surface (27). Also are shown lens (18) and optical fiber (19). This embodiment has advantages when used for clearing total occlusions (22)..." (emphasis added)

The present invention also teaches that the working head is located at the distal end of the catheter in Figures 1, 5, 6, 9 and 10. This is in clear contrast to the devices of the cited prior art and in particular Patel et al. The present invention also teaches that the imaging elements are located at the distal end of the guidewire, which is also in contrast to the devices of the cited prior art.

The Applicant has now amended claims 1 and 16 to recite such a relationships between the imaging guidewire, working head and catheter.

Further, Applicant asserts that there is neither hint nor suggestion in the cited prior art to provide the combination of imaging guidewire and working head as now claimed.

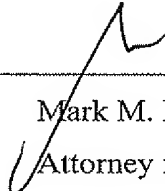
Applicant has also added new claim 32 that is directed toward the limitation that the catheter, including the working head, and the imaging guidewire are configured to be advanced across the lesion together. This claim parallels claim 4 and is supported in the last full paragraph of page 7 of the instant application.

The Applicant believes that the above comments and amendments completely overcome the Examiner's rejections of claims 1 and 16 on §103(a) grounds, and therefore the rejections of claims 2-15 and 17-31, which depend therefrom, are now rendered moot.

In view of the above remarks, it is respectfully submitted that the claims are in condition for allowance.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,
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